

REMARKS

In the outstanding Office Action dated July 3, 2002, the Examiner rejected claims 1-4, 16-19, and 28-31 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,465,359 to Allen et al. ("Allen"). Applicants respectfully traverse this rejection insofar as the Examiner deems it applicable to the amended claims.

Independent claims 1, 16, and 28 patentably distinguish the invention from Allen. Independent claim 1, for example, defines a system for monitoring the operation of computer programs by collecting software related events. As recited in the claims, these software related events relate to a plurality of target programs and are received from the target programs. In particular, the system of claim 1 includes a plurality of event collection cards, each receiving software related events from a respective target program. Each event collection card and its respective target program are installed on the same system bus. Each event collection card further includes a time stamp clock for providing a time stamp when each event is received and an event memory for storing the received events. A sync control unit synchronizes the time stamp clock to a sync signal received by the sync interface. A collection control unit then time stamps the collected events according to the time stamp clock synchronized to the sync signal. The collection control unit then stores the time stamped events in the event memory.

Rather than collecting software related events or computer program events from a target program, Allen, in contrast, manages information in a data processing system by correlating data with the users of that data. By correlating such data, the system of Allen can maintain a user's status with respect to data when the user's connection is normally or abnormally terminated. (See, e.g., col. 5, lines 45-51; col. 6, lines 28-32; col. 54, lines 2-6). For this purpose, the Allen system includes a plurality of central

processing complexes (CPC) 12 coupled to an I/O system 14 and a coupling facility 16. Each CPCs 12 has an operating system 13 having a management facility 15 for “managing structures and users of structures and for recording status of users and structures” in coupling facility 16. (Col. 6, lines 11-14). Coupling facility 16 thus “contains storage accessible by the CPCs, performs operations requested by programs in the CPCs and maintains status regarding structures and users of structures” located within facility 16. (Col. 7, lines 5-8). Accordingly, coupling facility 16 can correlate data with the status of users of that data across the multiple CPCs.

Thus, Allen fails to disclose or suggest a plurality of event collection cards receiving software related events or computer program events from respective target programs, where each software related or computer program event relates to a target program, as recited in amended claims 1, 16, and 28. Moreover, as defined in the specification, the term “event” refers to any software related event occurring in or generated by a monitored program, including an event occurring in or generated by a software thread of the monitored program. (Specification, Page 8, Lines 7-9). In no way does Allen deal with such software related events. The events referred to by Allen, and relied upon by the Examiner, merely relate to user connections. (See, e.g., col. 26, lines 13-24). As described above, the Allen system then uses information on each user’s connection to track user status after a connection is terminated.

Allen also fails to disclose or suggest any type of system for monitoring the operation of computer programs, as recited in amended claims 1, 16, and 28. As noted above, Allen simply monitors the status of users of particular data by “managing [data] structures and users of structures.” (Col. 5, lines 44-46). Nothing in Allen even

remotely deals with the monitoring of computer programs by collecting software related events from those programs, as recited in the claims.

The portions of Allen referred to by the Examiner highlight these differences between Allen and the claimed invention. For example, the Examiner refers to local cache 20 of Allen as disclosing an event memory for storing above claimed events. (Office Action, p. 2). But Allen teaches that local cache 20 only stores information on the data structures accessed by the users. (Col. 7, line 63 - col. 8, line 10). Local cache 20 does not, as suggested by the Examiner, store software related events received from and related to a target program, as recited in the claims.

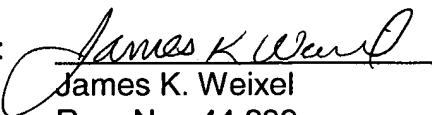
The Examiner also rejected claims 5-9, 12-15, 20, 21, 24-27, 32-35, and 38-40 under 35 U.S.C. § 103 as unpatentable over Allen and U.S. Patent No. 6,073,255 to Nouri. The Examiner relies upon Nouri for its apparent disclosure of a master card synchronizing a slave card. Since Nouri fails to cure the above deficiencies of Allen, however, and since claims 5-9, 12-15, 20, 21, 24-27, 32-35, and 38-40 depend from claims 1, 16, and 28, respectively, the claims are allowable for the reasons given above.

The Examiner also rejected claims 10, 11, 22, 23, 36, and 37 under 35 U.S.C. § 103 as unpatentable over Allen, Nouri, and U.S. Patent No. 5,375,070 to Hershey. The Examiner relies upon Hershey for its apparent disclosure of a bus isolation unit. Since Hershey also fails to cure the above deficiencies of Allen, however, and since claims 10, 11, 22, 23, 36, and 37 depend from claims 1, 16, and 28, respectively, claims 1-40 are allowable for the reasons given above.

Therefore, in view of the foregoing remarks, Applicant respectfully requests the reconsideration and reexamination of this application and the timely allowance of pending claims 1-40.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 07-2339.

Respectfully submitted,

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APPENDIX TO AMENDMENT OF NOVEMBER 4, 2002

Version with Markings to Show Changes Made

Amendments to the Claims

1. (Amended) A system for monitoring the operation of computer programs by collecting software related events relating to a plurality of target programs, each program running on a respective target processor, and each target processor being located on a separate system bus, the system comprising:

a plurality of event collection cards, each receiving software related events from a respective one of the plurality of target programs, wherein each of the plurality of event collection cards and the respective one of the target programs [is] are installed on the same system bus, and wherein each event collection card includes:

a time stamp clock for providing a time stamp when each event is received;

an event memory for storing the received events;

a sync interface unit for receiving a sync signal;

a sync control unit for synchronizing the time stamp clock to the sync signal received by the sync interface; and

a collection control unit for time stamping the collected events according to the time stamp clock synchronized to the sync signal, and for storing the time stamped events in the event memory.

16. (Amended) An apparatus for monitoring the operation of computer programs by collecting computer program events, the apparatus comprising:

an event collection card for receiving the computer program events, wherein the event collection card includes:

a time stamp clock for providing a time stamp indicating when each event is received;

an event memory for storing the received events;

a sync interface unit for receiving a sync signal;

a sync control unit for synchronizing the time stamp clock to the sync signal received by the sync interface; and

a collection control unit for time stamping the collected events according to the time stamp clock synchronized to the sync signal, and for storing the time stamped events in the event memory.

28. (Amended) In a system having a plurality of target programs, each program running on a respective target processor, and each target processor being located on a separate system bus, wherein each of a plurality of event collection cards and a respective one of the target programs are installed on the same system bus, wherein each event collection card performs a method for monitoring the operation of computer programs, comprising [the steps of]:

receiving software related events from the respective one of the plurality of target programs;

storing the received events in an event memory;

receiving a sync signal;
synchronizing a time stamp clock to a received sync signal;
time stamping the collected events according to the time stamp clock
synchronized to the sync signal; and
storing the time stamped events in the event memory.